## REMARKS

The present is a conveying wire. A conveying wire 2 in accordance with a preferred embodiment of the invention includes disc-shaped conveying members 8 for use in endless tube conveyor systems, the wire comprising twisted strands 4 that each are made of threads or fibers, including an outer jacket 6 to which the conveying members are fastened directly by injection molding, wherein the outer jacket comprises a polymer with a melting temperature which is lower than the melting temperature of the plastic material from which the conveying members are injected molded. The present invention addresses the problem in the prior art that occurs with conveying wires of the type of the present invention which are manufactured from the outer jacket and the disk conveying members having the same melting temperature. See paragraph [0003] of the Second Substitute Specification which states therein that adhesion is inferior which results in destruction of the conveying system prematurely.

The present invention is based upon the discovery that extraordinary good adhesion may be produced between the disc-shaped members through adherence to the outer jacket to the fibers in the wire by choosing the melting temperature of the disc material to be higher than the melting temperature of the jacket material which results in a softening of the outer jacket locally at the conveying members to provide the aforementioned good adhesion. See paragraphs [0005] – [0015] of the Second Substitute Specification for a description of the attributes of the present invention.

The claims stand objected to for informalities noted in Section 1 of the Office Action. The claims have been amended to improve their form for reexamination including addressing the subject matter of the objections.

Claims 8, 18, 19, 21, 31 and 32 stand rejected under 35 U.S.C. §103 as being unpatentable over United States Patent 6,790,399 (Fujii) in view of United States Patent 6,403,889 (Mehan et al). The Examiner reasons as follows:

> Fujii (Figure 2) discloses a conveying wire including disc-shaped conveying members for use in endless tube conveyor systems, the wire consisting of a number of twisted strands (4) that each are made of threads or fibers, and including an outer jacket (5) to which said conveying members are fastened directly by injection moulding, wherein said outer jacket consists of a polymer. Fujii does not disclose the outer jacket polymer having a melting temperature which is lower than the melting temperature of the plastic material from which the conveying members are injection moulded (re claims 8 and 21). Mehan et al. discloses a bi-layer covering, wherein the outer layer has a melting point higher than the melting point of the inner layer. It would have been obvious to one skilled in the art to use a polymer having a melting point lower than that of the conveying members, the polymer jacket (the inner layer) having melting point lower than the polymer of the conveying members (the outer layer), as taught by Mehan et al. to provide heat resistant means for the jacket (emphasis added).
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> Re claims 18, 19, 31, and 32, it would have been obvious to one skilled in the art to choose suitable lay length for the strands of Fujii to meet the specific use of the resulting wire since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller,* 105 USPQ 233.

These grounds of rejection are traversed for the following reasons.

Fujii pertains to cables of the same type as the present invention. However, the problem of poor adhesion between the disc-shaped member and the cable is addressed by a different mechanism which is that a cut-out area 6 which is described as a "groove-like part" is provided to expose the wire. Thereafter, what occurs is that the disc-like part is attached, as illustrated in Fig. 2B, such that

"synthetic resin flows into the groove-like part 6 also, in a protrusion 8 corresponding to the groove-like part 6 is formed in the substantially central part of the through-hole 7 of the disc 3" as described in column 4, lines 58-64. Therefore, enhanced strength is achieved by the groove-like part 6 (even though it is recognized that the resin has poor adhesion properties) if the resin is engaged therein. See column 4, lines 65-68, through column 5, lines 1-7. Therefore, it is seen that a person of ordinary skill in the art would not give any consideration to the relative melting point between the outer cover layer 5 and the melting point of the disc 3 to achieve the filling of the groove 6 with molten material to obtain strong adhesion.

The Examiner's reliance upon Mehan et al as a basis for modifying the teachings of Fujii to arrive at the claimed subject matter is misplaced. Mehan et al pertains to a bi-layer covering sheath in which a non-foamable outer layer 10 is provided having a higher melting point than a foamable thermoplastic polymeric layer 12. Upon heating of the multiple layer pipe structure of Mehan et al above the temperature at which the layer 12 foams, the gap between the outside of the substrate and the inside of the outer layer is filled to produce the filled inner layer 12 as shown in Fig. 3 which contains the substrate 20. This accomplished without changing the shape of the outer layer. See column 2, lines 56-68.

The reason for choosing the melting point of the outer layer to be substantially above foaming temperature of the inner layer 12 is simply to provide a containment mechanism for the foaming in the interior of the outer layer 14 when heating to the foaming temperature so as to envelop the substrate 20 completely. No consideration is given to forming a high strength connection between the inner and outer portions of Mehan et al's bi-layer covering sheath.

It is submitted that a person of ordinary skill in the art would not consider Mehan et al's teachings to be analogous art. Mehan et al's teachings neither pertain to the same field of technology, namely, a conveying wire including disc-shaped conveying members nor address a common problem which must be present for Mehan et al's disclosure to be analogous art. It is submitted that the Examiner is engaging in impermissible hindsight to suggest the modification of Fujii to arrive at the claimed subject matter. The Examiner cannot demonstrate on the record why any consideration would be given to Mehan et al's teaching by a person of ordinary skill in the art of an outer layer having a melting point at least 60° above the melting point of the inner layer in the manufacturing of a conveying wire. The Examiner is engaging in a hindsight reconstruction of the claimed invention.

Newly submitted claims 34-40 have been added to claim the invention in an open-ended manner to eliminate "consisting" language. Claims 33-40 are patentable for the same reasons set forth above.

The specification and Abstract have been amended to improve its form for reexamination.

In view of the foregoing amendments and remarks, it is submitted that each of the claims in the application is in condition for allowance. Accordingly, early allowance thereof is respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 C.F.R. §1.136. Please charge any shortage in fees due in connection with the

filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (900.45201X00) and please credit any excess fees to such Deposit Account.

Respectfully submitted,

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